

## ABSTRACT

The present invention concerns a method for fabricating a nanowire thermoelectric device comprising the step of providing a substrate upon which to form nanowires. The substrate comprises substrate electrodes passing from a top exposed surface of the substrate to a bottom exposed surface of the substrate. Another step involves forming a first electrode pattern, which forms first and second electrically connected groups of substrate electrodes, on the bottom surface of the substrate. A p-type nanowire is then formed on the substrate by activating the first group of substrate electrodes during p-type material deposition. Similarly, a n-type nanowire is formed by activating the second group of substrate electrodes during n-type material deposition. And top electrodes are formed to connect the p-type and the n-type nanowires and a second electrode pattern is formed on the bottom side of the substrate to replace the first electrode pattern to form a thermocouple.